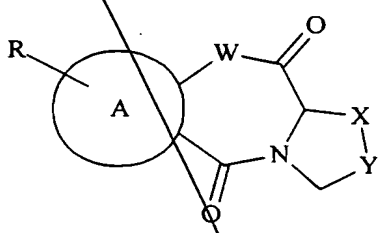
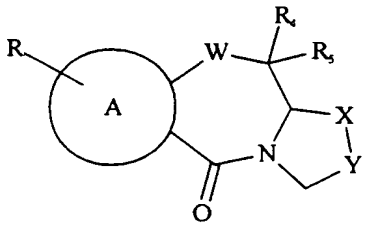
We claim:

1. A method of inhibiting a HIV integrase, the method comprising:

exposing the integrase to an integrase inhibiting amount of one or more anti-integrase compounds selected from the group consisting of the following compounds, or pharmaceutically acceptable salts thereof:





wherein

A is thiazole, benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline;

R is one or more of H, halogen, lower alkyl, lower alkoxy, NO_2, lower ester or carboxylic acid;

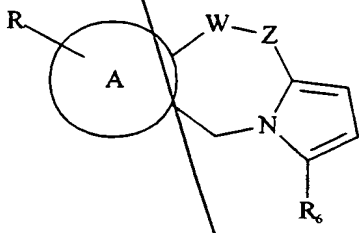
X-Y is CH_2-S, S-CH_2, CH_2-O, CH_2-S(O), S(O)-CH_2, CH_2-CH_2, CH_2-CH_2-CH_2, or CH_2-CH_2-CH_2-CH_2;

R_4 is H or hydroxy;

R_5 is H, phenyl, or alkylamine; and

W is S or O.

or wherein the compound is



wherein

A is thiazole, benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline; and

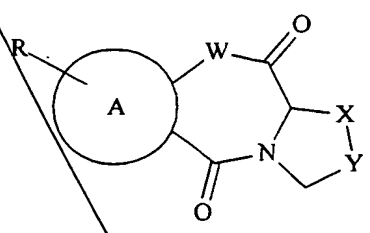
R is one or more of H, halogen, lower alkyl, lower ester or carboxylic acid;

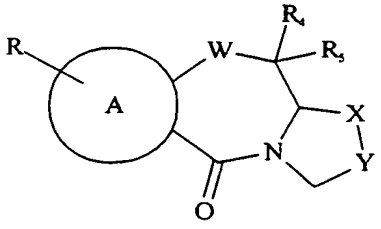
R_6 is H, substituted or unsubstituted alkyl or amine;

W is S or O; and

Z is S, O, CH_2, CH_2CH_2, or C=O.

2. The method of claim 1, wherein the compound is selected from the group consisting of:





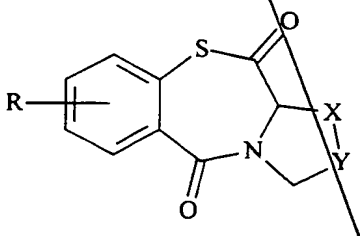
wherein X-Y is CH_2-S, S-CH_2, CH_2-O, or CH_2-CH_2, and W is S.

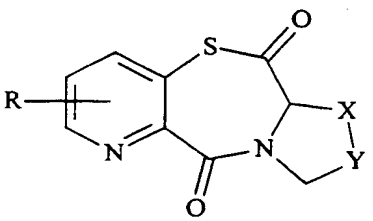
3. The method of claim 2, wherein:
A is benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline.

4. The method of claim 3, wherein A is benzene or naphthalene.

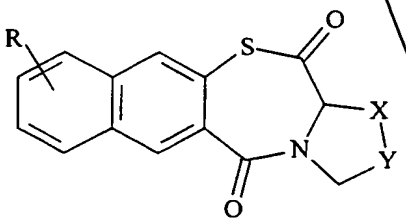
5. The method of claim 4, wherein R is H, halogen, lower alkoxy, or NO_2.

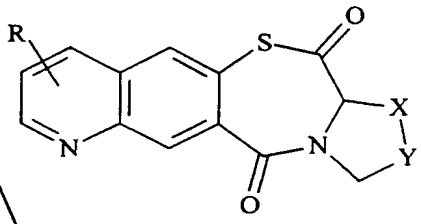
6. The method of claim 1, wherein the compound is:



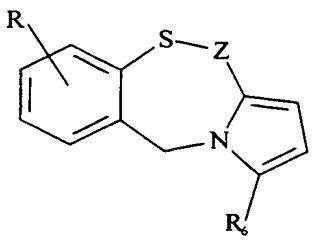


or

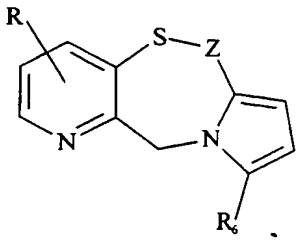




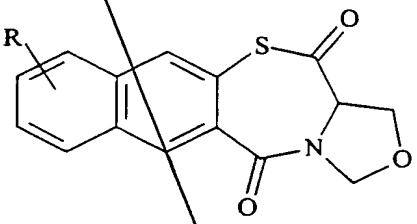
7. The method of claim 1, wherein the compound is:



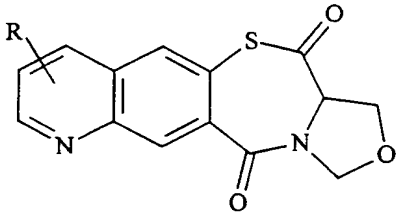
or



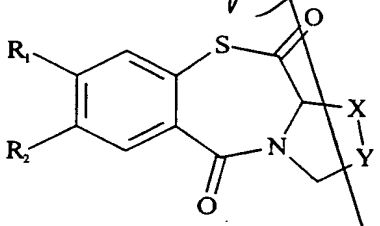
8. The method of claim 6, wherein the compound is

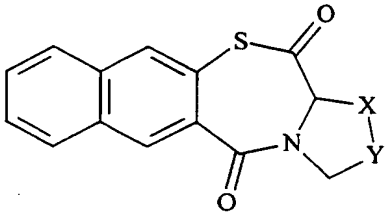


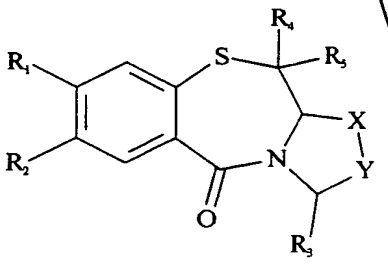
or



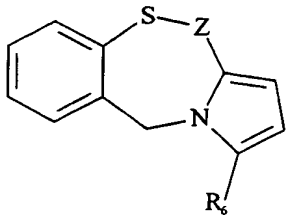
9. The method of claim 1, wherein the compound is one of the following:







or



wherein X-Y is S-CH_2, CH_2-S, CH_2-O, CH_2-CH_2, S(O)-CH_2, or CH_2-S(O);

R_1 and R_2 are independently selected from the group consisting of H, NO_2, halogen, lower alkyl or lower alkoxy;

R_3 is H or phenyl;

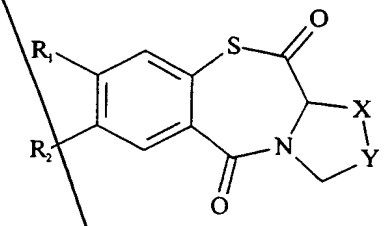
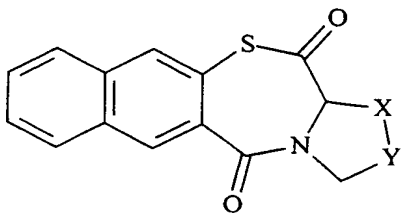
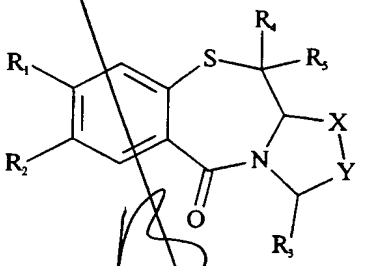
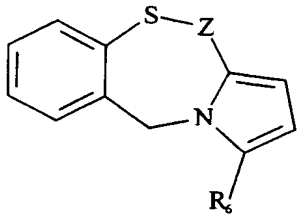
R_4 is H or hydroxy;

R_5 is H, phenyl or alkylamine; and

R_8 is H, phenyl or alkylamine.

10. The method of claim 9, wherein the alkylamine is $-N(CH_2CH_2)_2NCH_3$,$-CH_2NCH_2CH_3$, or $-CH_2N(CH_2CH_2)_2NCH_3$.

11. The method of claim 7, wherein the compound is




or


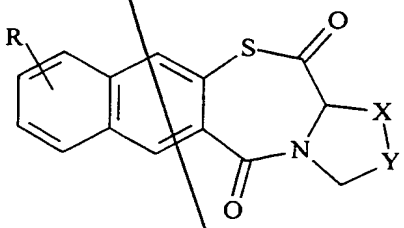
X-Y is $S-CH_2$, CH_2-S, or $CH_2-S(O)$;

and R_1 and R_2 are independently selected from the group consisting of H, NO_2, halogen, lower alkyl and lower alkoxy;

R_3 is H; and

R_4, R_5, and R_6 are H.

12. The method of claim 1, wherein the compound is



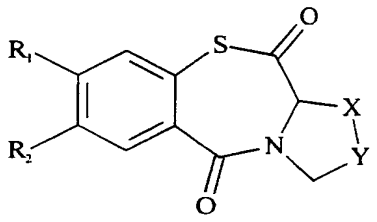
and X-Y is $S-CH_2$ or CH_2-S.

13. The method of claim 12, wherein R is H.

14. The method of claim 13, wherein X-Y is $S-CH_2$.

15. The method of claim 9, wherein
R_1 is H, NO_2, or lower alkoxy,
R_2 is H, Cl, Br, lower alkyl, or lower alkoxy;
R_3 and R_4 are H;
R_5 is $N(CH_2CH_2)_2NCH_3$; and
X-Y is CH_2-S, S-CH_2, or CH_2-CH_2.

16. The method of claim 15 wherein the compound is



wherein R_1 is H, NO_2, or methoxy;
R_2 is H, halogen or methoxy; and
X-Y is CH_2-S or S-CH_2.

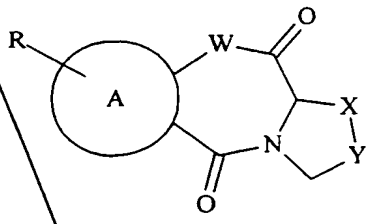
17. The method of claim 1, wherein the compound is administered in a therapeutically effective amount to a subject.

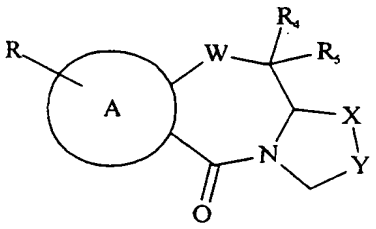
18. The method of claim 17, wherein the method is a method of treating or preventing HIV infection in the subject.

19. The method of claim 15, wherein the compound is administered in a therapeutically effective amount to a subject to treat or prevent an HIV infection.

20. The method of claim 16, wherein the compound is administered in a therapeutically effective amount to a subject to treat or prevent an HIV infection.

21. A method of treating or preventing HIV infection in a subject, comprising administering to the subject a therapeutically effective amount of a compound selected from the group consisting of:





wherein

A is thiazole, benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline;

R is one or more of H, halogen, lower alkyl, lower alkoxy, NO_2, lower ester or carboxylic acid;

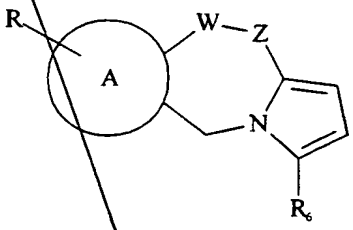
X-Y is CH_2-S, S-CH_2, CH_2-O, CH_2-S(O), S(O)-CH_2, CH_2-CH_2, CH_2-CH_2-CH_2, or CH_2-CH_2-CH_2-CH_2;

R_4 is H or hydroxy;

R_5 is H, phenyl, or alkylamine; and

W is S or O.

or wherein the compound is



wherein

A is thiazole, benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline; and

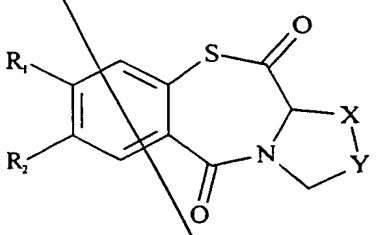
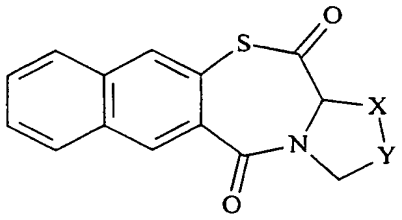
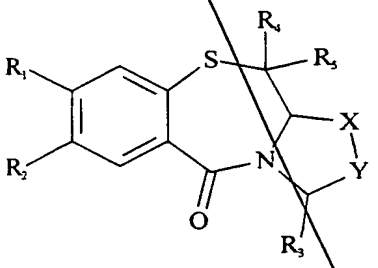
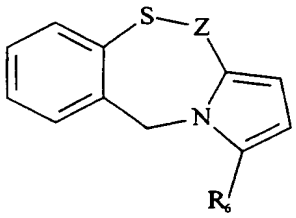
R is selected from the group of H, halogen, lower alkyl, lower ester or carboxylic acid;

R_6 is H, substituted or unsubstituted alkyl or amine;

W is S or O; and

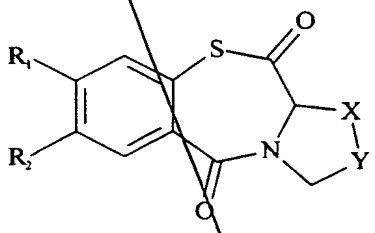
Z is S, O, CH_2, CH_2CH_2, or C=O.

22. The method of claim 21, wherein the compound is selected from the group consisting of:




and


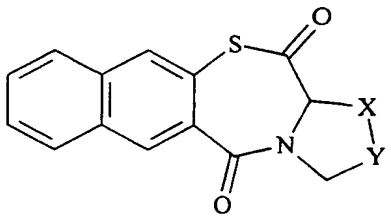
wherein X-Y is S-CH_2, CH_2-S, CH_2CH_2 or S(O)CH_2;
R_1 is H, NO_2, or lower alkoxy;
R_2 is H, Cl, Br, lower alkyl, or lower alkoxy;
R_3 and R_4 are H;
R_5 is $N(CH_2CH_2)_2NCH_3$; and
R_6 is H.

23. The method of claim 21, wherein the compound is



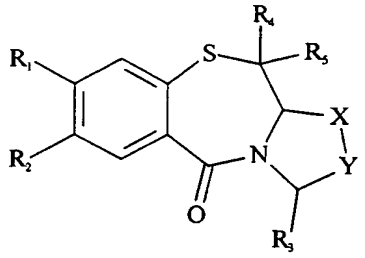
and
R_1 and R_2 are H, and X-Y is S-CH_2; or
R_1 is H, R_2 is Cl or Br or methyl, and X-Y is S-CH_2; or
R_1 is NO_2, R_2 is H, and X-Y is CH_2-S; or
R_1 and R_2 are methoxy, and X-Y is CH_2-S; or
R_1 is H, R_2 is methyl, and X-Y is S(O)-CH_2.

24. The method of claim 21, wherein the compound is



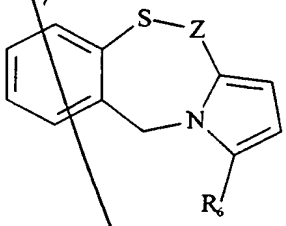
wherein X-Y is $S\text{-}CH_2$ or $CH_2\text{-}S$.

25. The method of claim 21, wherein the compound is



wherein X-Y is $CH_2\text{-}CH_2$;
R_1, R_2, R_3 and R_4 are H; and
R_5 is $N(CH_2CH_2)_2NCH_3$.

26. The method of claim 21, wherein the compound comprises



wherein R_6 is H and Z is C=O.

27. The method of claim 1, wherein

A is thiazole, benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline;

R is one or more of halogen or NO_2;

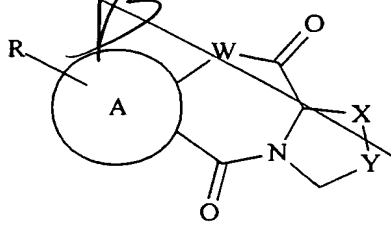
X-Y is $CH_2\text{-}S$, $S\text{-}CH_2$, $CH_2\text{-}O$, $CH_2\text{-}S(O)$, $S(O)\text{-}CH_2$, $CH_2\text{-}CH_2$, $CH_2\text{-}CH_2\text{-}CH_2$, or $CH_2\text{-}CH_2\text{-}CH_2\text{-}CH_2$;

R_4 is H or hydroxy;

R_5 is H, phenyl, or alkylamine;

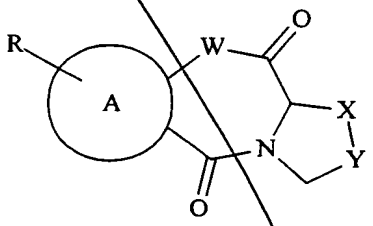
R_6 is H, or substituted or unsubstituted alkyl or amine; and
W is S or O.

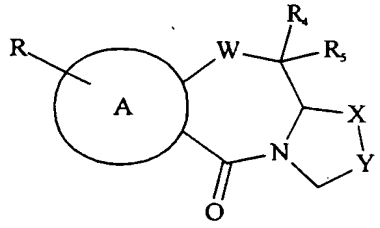
28. The method of claim 21, wherein the compound comprises



and A is benzene or naphthalene;
R is H, NO_2, or lower alkoxy; and
X-Y is CH_2-S or S-CH_2.

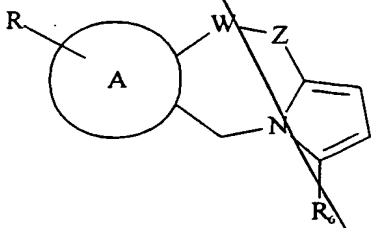
29. A compound having the following formula, or a pharmaceutically acceptable salt thereof:





wherein A is thiazole, benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline;
R is one or more of halogen or NO_2;
X-Y is CH_2-S, S-CH_2, CH_2-O, CH_2-S(O), S(O)-CH_2, CH_2-CH_2, CH_2-CH_2-CH_2, or CH_2-CH_2-CH_2-CH_2;
R_4 is H or hydroxy;
R_5 is H, phenyl, or alkylamine; and
W is S or O.

or wherein the compound is



wherein

A is thiazole, benzene, naphthalene, pyridine, pyrimidine, pyrazine, or quinoline; and

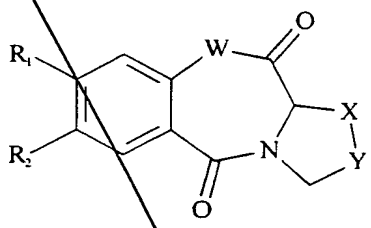
R is one or more of halogen or NO_2;

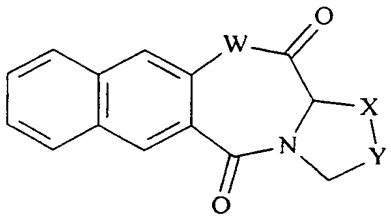
R_6 is H, substituted or unsubstituted alkyl or amine;

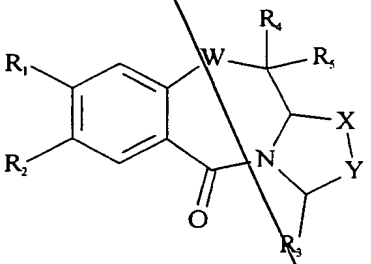
W is S or O; and

Z is S, O, CH_2, CH_2CH_2, or C=O.

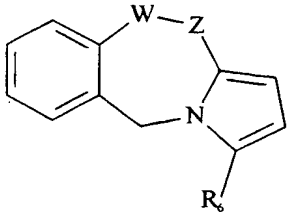
30. A compound having the following formula, or a pharmaceutically acceptable salt thereof, wherein the compound is:







or



wherein

X-Y is S-CH_2, CH_2-S, S(O)-CH_2, CH_2-S(O), or CH_2CH_2;

W is S or O;

R_1 is H or NO_2;

R_2 is H, halogen, lower alkyl or lower alkoxy;

R_3 is H;

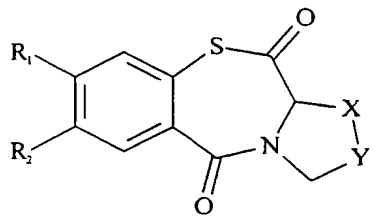
R_4 is hydroxy or H;

R_5 is phenyl or $N(CH_2CH_2)_2NCH_3$; and

R_6 is $CH_2N(CH_2CH_2)_2NCH_3$,

provided that R_1 and R_2 are not both H or not both alkoxy.

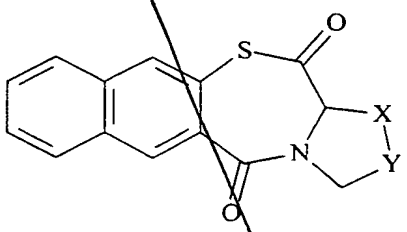
31. The compound of claim 30, wherein the compound is



and R_1 is H or NO_2;
R_2 is H, halogen, lower alkyl or lower alkoxy;
provided that R_1 and R_2 are not both H or not both alkoxy.

32. The compound of claim 30, wherein
R_1 is H, R_2 is Cl, X-Y is S-CH_2; or
R_1 is H, R_2 is Br, X-Y is S-CH_2; or
R_1 is H, R_2 is CH_3, X-Y is S-CH_2; or
R_1 is H, R_2 is H, X-Y is CH_2-S; or
R_1 is H, R_2 is Cl, X-Y is CH_2-S; or
R_1 is H, R_2 is Br, X-Y is CH_2-S; or
R_1 is H, R_2 is CH_3, X-Y is CH_2-S; or
R_1 is NO_2, R_2 is H, X-Y is CH_2-S; or
R_1 is H, R_2 is OCH_3, X-Y is CH_2-S; or
R_1 is H, R_2 is H, X-Y is CH_2-O; or
R_1 is H, R_2 is CH_3, X-Y is S(O)-CH_2; or
R_1 is H, R_2 is H, X-Y is CH_2-S(O); or
R_1 is H, R_2 is Cl, X-Y is CH_2-S(O); or
R_1 is H, R_2 is OCH_3, X-Y is CH_2-S(O).

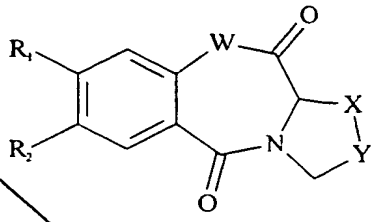
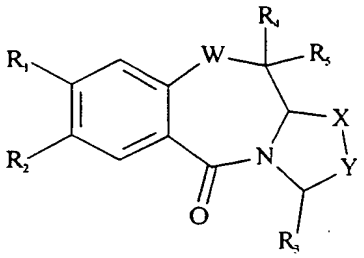
33. The compound of claim 30, wherein the compound is



and X-Y is S-CH_2 or CH_2-S.

34. The compound of claim 30, wherein X-Y is S-CH_2.

35. The compound of claim 30, wherein the compound is:

and R_1, R_2 and R_3 are H, R_4 is OH or H;
R_5 is Ph or $N(CH_2CH_2)_2CH_3$; and
X-Y is CH_2-CH_2.

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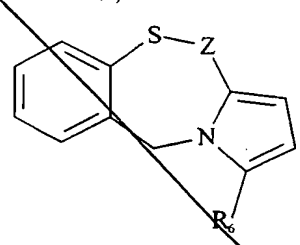
36. The compound of claim 30, wherein the compound is



and R_6 is $CH_2N(CH_2CH_2)_2NCH_3$.

37. A pharmaceutical composition comprising the compound of claim 29, or the pharmaceutically acceptable salt, and a pharmaceutically acceptable carrier.

38. A pharmaceutical composition comprising the compound of claim 30, or the pharmaceutically acceptable salt, and a pharmaceutically acceptable carrier.

39. A method of screening for an anti-HIV integrase drug, comprising:
providing an assay of HIV integrase inhibition; and
using the assay to screen for drugs comprising analogs or derivatives of any of the compounds of claim 1.

40. The method of claim 39, wherein the assay detects a thiazepine compound that inhibits human immunodeficiency virus type-1 intregrase (HIV-1 IN).

41. The method of claim 40, further comprising detecting a thiazepine having no detectable effect on reverse transcriptase, protease, and virus attachment.

42. The method of claim 39, wherein the compound is a thiazolothiazepine.

43. The compound of claim 29, for use in a pharmaceutical composition for the inhibition of HIV integrase.

44. The compound of claim 43, for use in the treatment of HIV infection.

45. The compound of claim 44, for use as a prophylactic treatment against HIV infection.

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